Notes on Controls for Land Disturbances

HAR CHAPTER 11-55 APPENDIX C REQUIREMENTS THE FOLLOWING SPECIAL CONDITIONS APPLY TO ALL LAND DISTURBANCE WORK CONDUCTED UNDER THIS GENERAL PERMIT:

(A) CONSTRUCTION MANAGEMENT TECHNIQUES

- (1) CLEARING AND GRUBBING SHALL BE HELD TO THE MINIMUM NECESSARY FOR GRADING AND EQUIPMENT OPERATION.
- (2) CONSTRUCTION SHALL BE SEQUENCED TO MINIMIZE THE EXPOSURE TIME OF THE CLEARED SURFACE AREA
- (3) CONSTRUCTION SHALL BE STAGED OR PHASED FOR LARGE PROJECTS. AREAS OF ONE PHASE SHALL BE STABILIZED BEFORE ANOTHER PHASE IS INITIATED. STABILIZATION SHALL BE ACCOMPLISHED BY TEMPORARILY OR PERMANENTLY PROTECTING THE DISTURBED SOIL SURFACE FROM RAINFALL IMPACTS AND RUNOFF.
- (4) EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN, THESE MEASURES SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
- (5) ALL CONTROL MEASURES SHALL BE CHECKED AND REPAIRED AS NECESSARY, FOR EXAMPLE, WEEKLY IN DRY PERIODS AND WITHIN TWENTY-FOUR HOURS AFTER ANY RAINFALL OF 0.5 INCHES OR GREATER WITHIN A 24-HOUR PERIOD DURING PROLONGED RAINFALL, DAILY CHECKING IS NECESSARY. THE PERMITTEE SHALL MAINTAIN RECORDS OF CHECKS AND REPAIRS. CHECKS AND REPAIRS.
- (6) THE PERMITTEE SHALL MAINTAIN RECORDS OF THE DURATION AND ESTIMATED VOLUME OF STORM WATER DISCHARGE(S)
- (7) A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON EACH PROJECT SITE.

(B) VEGETATION CONTROLS

- (1) PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED, OR DISTURBED MORE THAN TWENTY CALENDAR DAYS PRIOR TO LAND DISTURBANCE.
- (2) TEMPORARY SOIL STABILIZATION WITH APPROPRIATE VEGETATION SHALL BE APPLIED ON AREAS THAT WILL REMAIN UNFINISHED FOR MORE THAN THIRTY CALENDAR DAYS.
- (3) PERMANENT SOIL STABILIZATION WITH PERENNIAL VEGETATION OR PAVEMENT SHALL BE APPLIED AS SOON AS PRACTICAL AFTER FINAL GRADING. IRRIGATION AND MAINTENANCE OF THE PERENNIAL VEGETATION SHALL BE PROVIDED FOR THIRTY CALENDAR DAYS OR UNTIL THE VEGETATION TAKES ROOT, WHICHEVER IS SHORTER.

(C) STRUCTURAL CONTROLS

- (1) STORM WATER FLOWING TOWARD THE CONSTRUCTION AREA SHALL BE DIVERTED BY USING APPROPRIATE CONTROL MEASURES, AS PRACTICAL. (2) EROSION CONTROL MEASURES SHALL BE DESIGNED ACCORDING TO THE SIZE
- OF DISTURBED OR DRAINAGE AREAS TO DETAIN RUNOFF AND TRAP SEDIMENT. (3) WATER MUST BE DISCHARGED IN A MANNER THAT THE DISCHARGE SHALL NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE BASIC WATER QUALITY CRITERIA AS SPECIFIED IN SECTION 11-54-04.

SITE-SPECIFIC CONSTRUCTION BMP CONTROL MEASURES

CONSTRUCTION ACTIVITIES

CONSTRUCTION INCLUDES THE SITE DEVELOPMENT

OF TMK: (3)1-5-002: 020 TO INCLUDE: DRYWELL INSTALLATION, CONCRETE BUILDING PAD, PAVEMENT PARKING LOT, WATERLINE INSTALLATION DRAIN PIPE INSTALLATION, SEPTIC SYSTEM INSTALLATION. & ELECTRICAL CONDUITS

SITE WORK CONSISTS OF SITE GRADING, WATERLINE & SEPTIC SYSTEM INSTALLATION, DRYWELLS, PAD GRADING, BUILDING CONSTRUCTION. ELECTRICAL CONDUITS, ASPHALT PAVING, LANDSCAPE INSTALLATION, AND TRENCHING.

ALL CONSTRUCTION ACTIVITY WILL INCORPORATE THESE BMPS WITHOUT MODIFICATION. IN CASE WHERE CONCRETE CURING WATER SCHEDULING AND QUANTITY IS SUCH THAT RUNOFF IS GENERATED, THE RUNOFF WILL BE CHANNELED VIA TEMPORARY SWALES INTO TEMPORARY DUG-UP OR BERMED DETENTION IMPERMEABLY-LINED BASINS, WITH THE BASIN(S) SIZED SO THAT THERE WILL BE NO OVERFLOWS. CONSTRUCTION SITE MANAGER WILL CONDUCT A SITE INSPECTION DAILY FOR ANY POTENTIAL POLLUTION SOURCES. ALL EQUIPMENT STORED ON SITE WILL BE IN GOOD WORKING ORDER WITH NO FUEL, OIL. TRANSMISSION FLUID, OR HYDRAULIC LEAKS. ANY EQUIPMENT FOUND TO BE FAULTY WILL BE REPAIRED IMMEDIATELY WITH NECESSARY BMP PRECAUTIONS TAKEN TO PREVENT AND CONTAIN STORM WATER CONTAMINATION. EQUIPMENT WHICH CANNOT BE REPAIRED WITHIN THE SAME WORKING DAY SHALL BE REMOVED FROM THE SITE TO AN APPROPRIATE

CONSTRUCTION EQUIPMENT INCLUDES; EXCAVATOR, LOADER, DRUM ROLLER/COMPACTOR, AND PAVING EQUIPMENT.

QUALITY OF DISCHARGE

THE EXISTING SOIL IS BROWN CLAYEY SILT; GROUND
COVER IS PRIMARILY TREES, BRUSH AND GRASS. PROPOSED FILL
GRAVEL FILTER SHALL BE:
3/4" FOR GRAVEL FILTER BAGS & DROP INLETS MATERIAL IS VOLCANIC ROCK AND GRANULAR MATERIAL.
THE MAJORITY OF THE WORK AREA WILL BE ASPHALTIC CONCRETE INSTALLATION, CONCRETE SIDEWALKS, RETAINING WALLS, UTILITY TRENCHING, AND BUILDING PADS. THE REMAINDER OF THE SITE WILL BE LANDSCAPED. DISCHARGE FROM THE SITE WILL BE CAPTURED IN CATCH BASINS AND DRAINED TO THIRTY-SIX (36) NEW SHALLOW DRYWELLS. THE PROPOSED DRYWELLS BASIN WILL CAPTURE ALL INCREASES IN STORM WATER RUN-OFF PER REQUIREMENTS. DISCHARGE FROM THE SITE AFTER DRYWELLS ARE OPERATIONAL WILL BE MINIMAL. DISCHARGE DURING CONSTRUCTION WILL BE CONTROLLED BY STAKED SEDIMENT WADDLES, GRAVEL BAG

CONTROL FOR LAND DISTURBANCES

THE OWNER AND/OR GENERAL CONTRACTOR SHALL COMPLY WITH OVERALL SITE PREPARATION - 2 WEEKS THE SPECIAL CONDITIONS FOR LAND DISTURBANCES (FROM HAR, SITE GRADING - 2 MONTH CHAPTER 11-55, APPENDIX C). REFER TO THE "NOTES ON CONTROLS FOR LAND DISTURBANCES" ON THIS SHEET.

EROSION AND SEDIMENT CONTROL REQUIREMENTS

PERMIT AVAILABLE FOR INSPECTION 30 DAYS BEFORE THE START OF CONSTRUCTION ACTIVITIES.

POTENTIAL POLLUTANTS

REMOVED VEGETATION AND OTHER DEBRIS WILL BE DISPOSED OF AT PAHOA TRANSFER STATION/ HILO LANDFILL. DEBRIS WILL NOT BE STORED ON SITE.

NO FUEL, OIL, AND HYDRAULIC FLUID SHALL BE STORED ON SITE. DRIP PLANS WILL BE PLACED UNDER VEHICLES ON SITE WHILE NOT IN USE. IN THE EVENT OF A LEAK OR SPILL FROM EQUIPMENT. THE FLOW WILL BE STOPPED AND ALL SOURCES OF IGNITION WILL BE ROUND. THE SPILL WILL BE CONTAINED BY PLACING SAND BAGS AROUND THE SPILL AREA. THE CONTAMINATED EARTH WILL BE PLACED IN CONTAINERS. IN THE CASE OF PONDING FUEL, A HAZARDOUS MATERIALS VACUUM TRUCK WILL REMOVE THE FUEL.

DISTURBED AREAS WILL BE PROTECTED WITH SEDIMENT WADDLES, AND SILT FENCES DURING CONSTRUCTION. ALL UNPAVED AREAS WILL BE SEEDED AND LANDSCAPED AFTER CONSTRUCTION.

PRODUCT SPECIFICATIONS FOR BMPS

FILTER FABRIC SHALL BE: 8.0 OZ/SQ YD GEOTEXTILE

CONSTRUCTION SCHEDULE

CONTRACTOR SELECTION DATE TBD. CONSTRUCTION IS ESTIMATED TO BEGIN IN TBD. CONSTRUCTION IS ESTIMATED TO END BY TBD.

BMPS WILL BE IMPLEMENTED FROM THE FIRST DAY OF CONSTRUCTION AND WILL BE REMOVED WHEN ALL CIVIL WORK ITEMS ARE COMPLETE AND VEGETATION COVER IS

ALL MAJOR CONSTRUCTION ACTIVITIES WILL PROCEED IN A LOGICAL SEQUENCE. MAJOR CONSTRUCTION ACTIVITIES

CONSTRUCTION TIMETABLE

WATERLINE CONSTRUCTION - 1 MONTHS

DRYWELL & STORM DRAIN PIPE CONSTRUCTION - 3 MONTHS

BUILDING PAD CONSTRUCTION - 1 MONTHS ELECTRICAL CONDUIT INSTALLATION - 2 MONTHS

THE CONTRACTOR SHALL HAVE THE COUNTY-APPROVED GRADING ASPHALT PAVING OF SITE & LANDSCAPE INSTALLATION - 2 WEEKS BUILDING CONSTRUCTION - 2 MONTHS

OVERALL DURATION: 12 MONTHS





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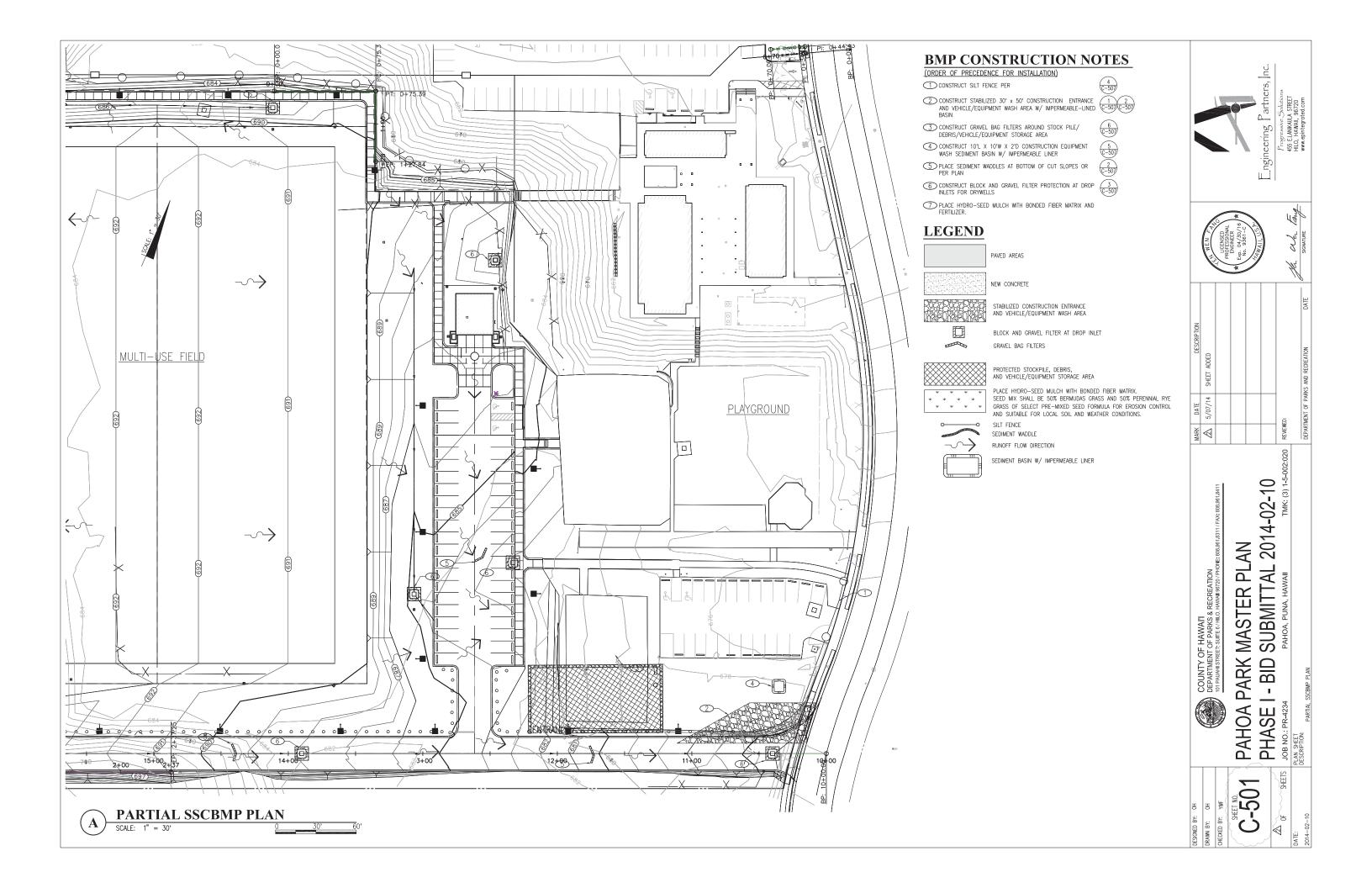
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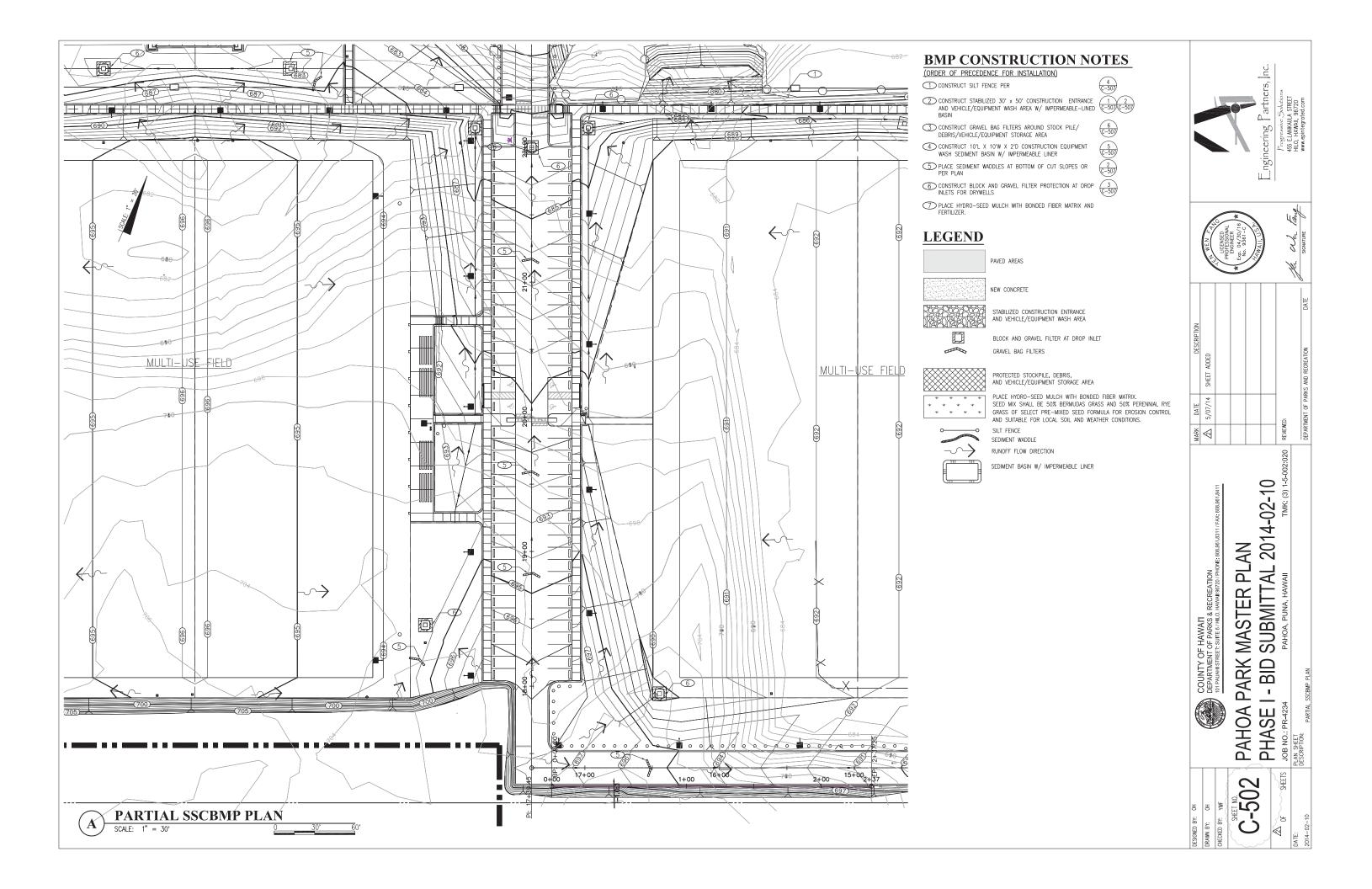
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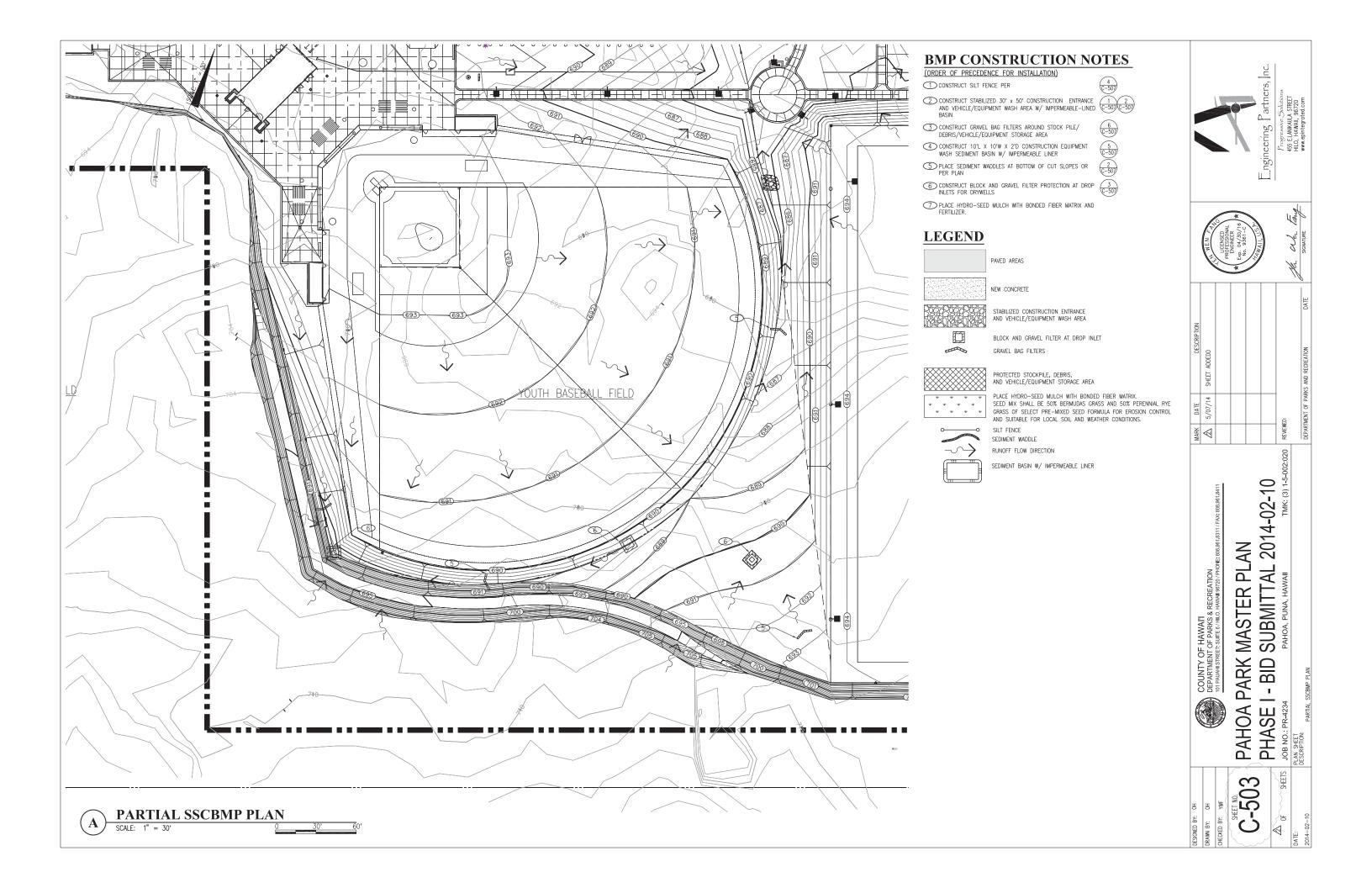
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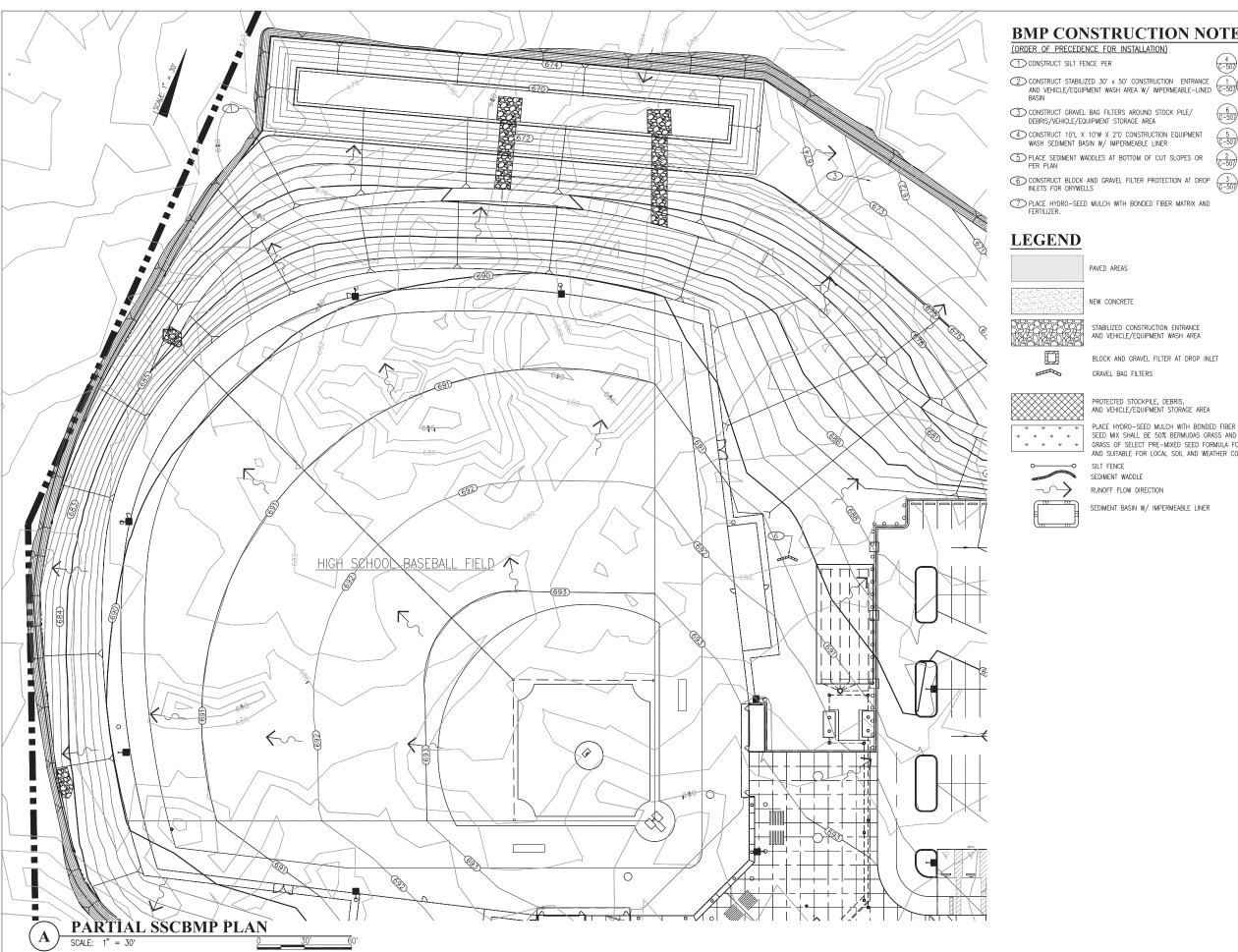
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BMP CONSTRUCTION NOTES

(ORDER OF PRECEDENCE FOR INSTALLATION)

1 CONSTRUCT SILT FENCE PER



(2) CONSTRUCT STABILIZED 30' x 50' CONSTRUCTION ENTRANCE (1) (2) AND VEHICLE/EQUIPMENT WASH AREA W/ IMPERMEABLE-LINED (-50) (-50)

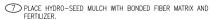


3 CONSTRUCT GRAVEL BAG FILTERS AROUND STOCK PILE/ DEBRIS/VEHICLE/EQUIPMENT STORAGE AREA 4 CONSTRUCT 10'L X 10'W X 2'D CONSTRUCTION EQUIPMENT



5 PLACE SEDIMENT WADDLES AT BOTTOM OF CUT SLOPES OR PER PLAN





LEGEND

PAVED AREAS



NEW CONCRETE



STABILIZED CONSTRUCTION ENTRANCE AND VEHICLE/EQUIPMENT WASH AREA



BLOCK AND GRAVEL FILTER AT DROP INLET

GRAVEL BAG FILTERS



PROTECTED STOCKPILE, DEBRIS, AND VEHICLE/EQUIPMENT STORAGE AREA

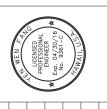
PLACE HYDRO-SEED MULCH WITH BONDED FIBER MATRIX. SEED MIX SHALL BE 50% BERMUDAS GRASS AND 50% PERENNIAL RYE GRASS OF SELECT PRE-MIXED SEED FORMULA FOR EROSION CONTROL AND SUITABLE FOR LOCAL SOIL AND WEATHER CONDITIONS. SILT FENCE



SEDIMENT WADDLE RUNOFF FLOW DIRECTION

SEDIMENT BASIN W/ IMPERMEABLE LINER





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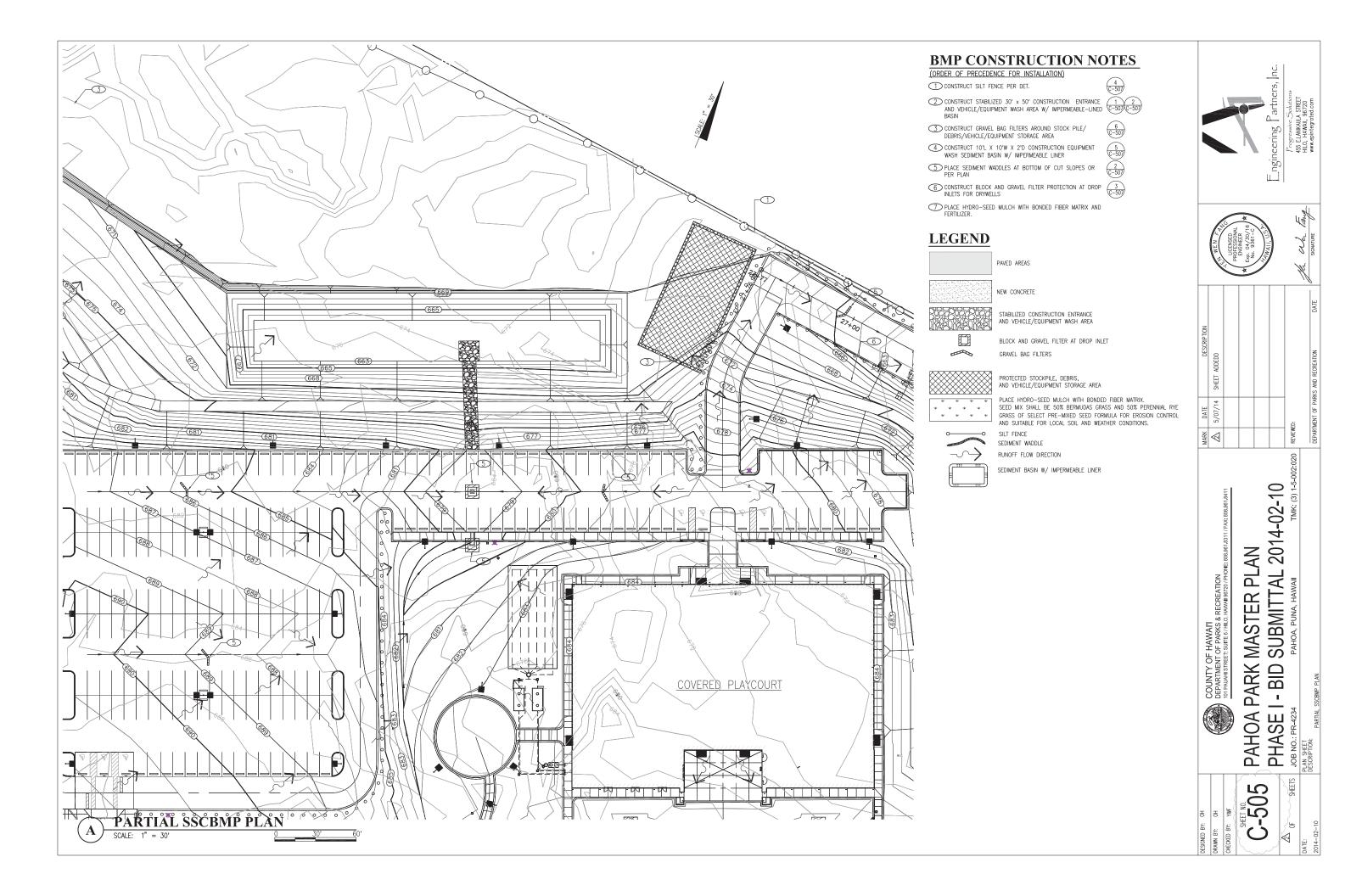
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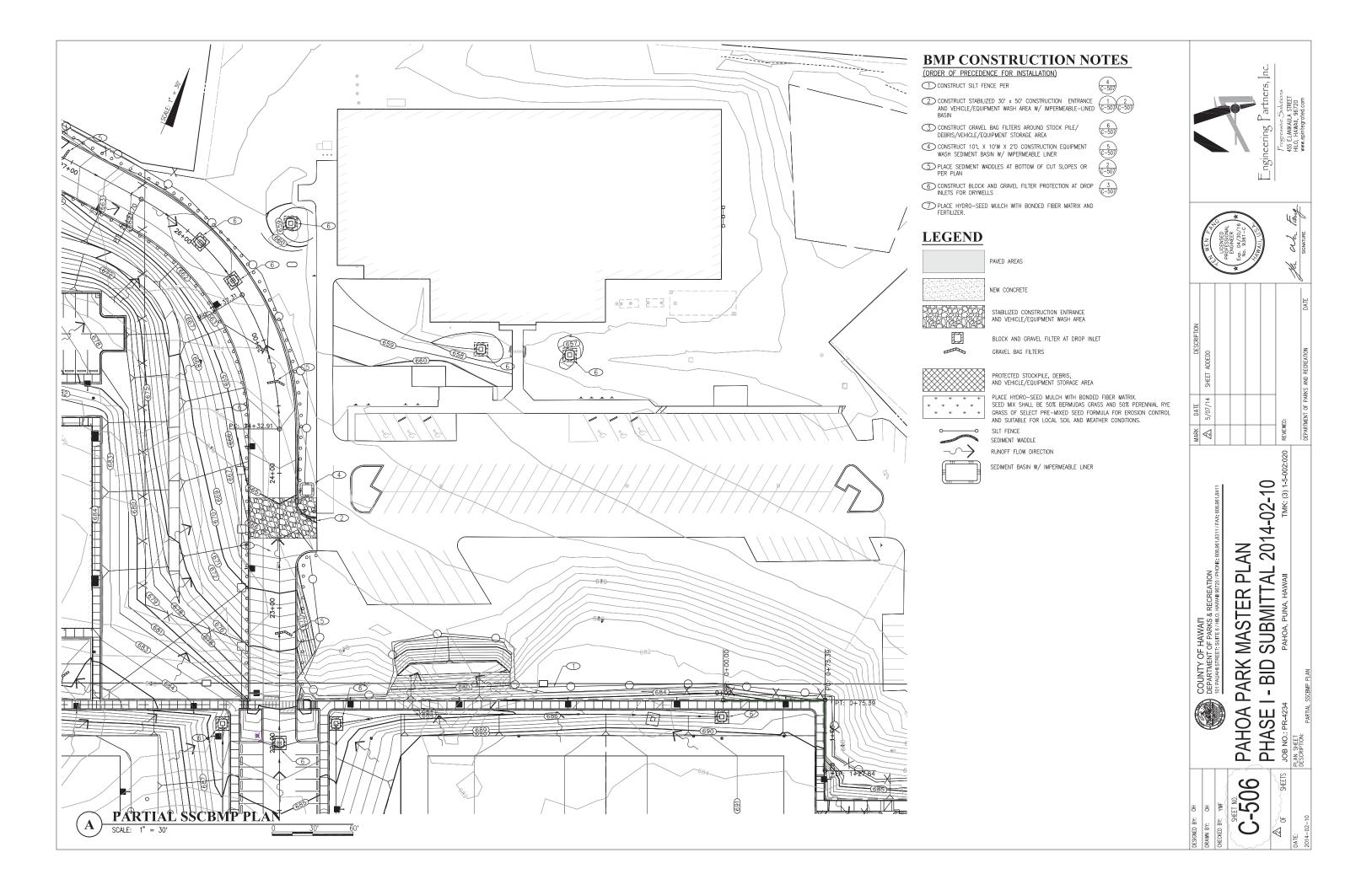
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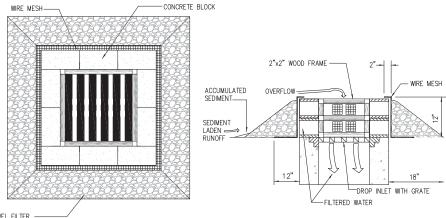
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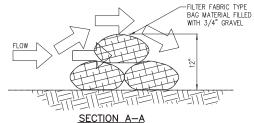
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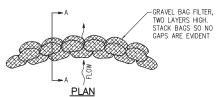






DRYWELL AND GRATED INLET PROTECTION

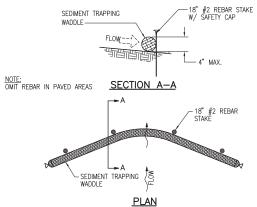




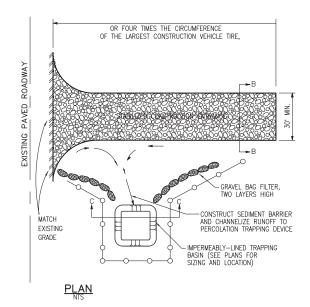
GRAVEL BAG FILTER DETAIL

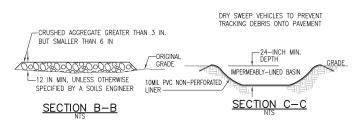
2. IF SILT FENCE IS OBTAINED FROM MANUFACTURER AS A PACKAGE (I.E. FABRIC ATTACHED TO POST) THE MANUFACTURER'S INSTALLATION INSTRUCTION SHALL BE ADHERED TO.

3. FENCE STAKES MAY BE WOOD OR METAL, MUST BE CAPABLE OF SUPPORTING ANTICIPATED LOADS.



STAKED SEDIMENT WADDLE





-24-INCH MIN. DEPTH G

STABILIZED CONSTRUCTION ENTRANCE

- LIMIT THE POINTS OF ENTRANCE/EXIT TO THE CONSTRUCTION SITE.
- 2. LIMIT SPEED OF VEHICLES TO CONTROL DUST.
- 3. PROPERLY GRADE EACH CONSTRUCTION ENTRANCE/EXIT TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
- 4. ROUTE RUNOFF FROM STABILIZED ENTRANCES/EXITS THROUGH A SEDIMENT-TRAPPING DEVICE.
- 5. DESIGN STABILIZED ENTRANCE/EXIT TO SUPPORT THE HEAVIEST VEHICLES AND EQUIPMENT THAT WILL USE IT.
- 6. SELECT CONSTRUCTION ACCESS STABILIZATION (AGGREGATE, ASPHALTIC CONCRETE, CONCRETE) BASED ON LONGEVITY, REQUIRED PERFORMANCE, AND SITE CONDITIONS. THE USE OF ASPHALT CONCRETE (AC) GRINDINGS FOR STABILIZED CONSTRUCTION ACCESS/ROADWAY IS NOT ALLOWED.
- 7. USE OF AGGREGATE OR CONSTRUCTED/MANUFACTURED STEEL PLATES WITH RIBS OR THE ALTERNATE WASH RACK DESIGN FOR ENTRANCE / EXIT MAY BE ALLOWED.
- 8. IF AGGREGATE IS SELECTED, PLACE CRUSHED AGGREGATE OVER GEOTEXTILE FABRIC TO AT LEAST 300 MM (12 IN) DEPTH.
- 9. CRUSHED AGGREGATE GREATER THAN 75 MM (3 INCHES) AND SMALLER THAN 150 MM (6 INCHES) SHALL BE USED.
- 10. DESIGNATE COMBINATION OR SINGLE PURPOSE ENTRANCES AND EXITS TO THE CONSTRUCTION SITE.
- 11. REQUIRE ALL EMPLOYEES, SUBCONTRACTORS, AND SUPPLIERS TO UTILIZE THE STABILIZED CONSTRUCTION ACCESS.
- 12. INSPECT MONTHLY AND AFTER EACH RAINFALL.
- 13. REMOVE ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS WITHIN 24 HOURS.
- REMOVE GRAVEL AND FILTER FABRIC AT COMPLETION OF CONSTRUCTION.

SEDIMENT TRAPPING

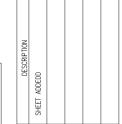
WASHING WATER)

IMPERMEABLY-LINED BASIN (SIZING: 1.5 TIMES TOTAL VOLUME OF

PLAN NTS

IMPERMEABLY-LINED BASIN WILL BE A MINIMUM OF 10°X10°X2°. IMPERMEALBY-LINED BASIN WATER WILL NOT DISCHARGE TO STATE WATERS. DRIP PANS WILL BE PLACED UNDER VEHICLES AND HEAVY EQUIPMENT WHEN NOT IN USE.

VEHICLES WILL BE INSPECTED FOR DRY SWEEPING AT THE CONSTRUCTION ENTRANCE PRIOR TO ENTRY ONTO PAVED ROADS. PURPOSE OF DRY SWEEPING IS TO REMOVE CONSTRUCTION DEBRIS AND SOIL FROM TIRES OR FACILITIES WHICH MAY CONVEY SOIL ONTO SURROUNDING PAVED ROADS. SEDIMENT BARRIERS AND TRAPPING DEVICE WILL BE REQUIRED FOR RAINSTORM INCIDENTS TO PREVENT SOIL DISTURBANCE RUNOFF.



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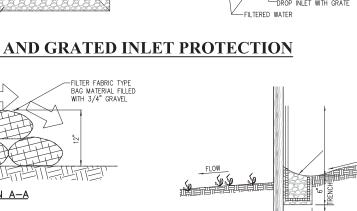
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CONCRETE TRUCK DRUM/CHUTE WASH WATER SEDIMENT BASIN NOT TO SCALE



. THE FILTER FABRIC SHALL BE A MINIMUM OF 36 INCHES WIDE.

SILT FENCE DETAIL NOT TO SCALE

NOT TO SCALE

10MIL PVC NON-PERFORATED

IMPERMEABLY-LINED BASIN

SECTION A-A